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Re 09/970,409 - EAST 1.3

BRS	L1	3369	edit$3 same tool		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 14:27
BRS	L2	3418	auto or automatic$4)same(generat$3 or creat$3)same(window or dialog adj1 box		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 14:29
BRS	L3	226	l1 and l2		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:24
BRS	L4	6	menu same(finite or predetermin$4)same(program$4 near5 statement$1)		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:08
BRS	L5	2	l3 and l4		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:11
BRS	L6	37	assist$3 or select$3 or sugest$3) same menu same(program$4 near5 statement$1		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:23
BRS	L7	2	l3 and l6USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:11
IS&R	L8	168	(717/110-113).CCLS.		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:11
IS&R	L9	1359	(345/710,714-716,762-764,781,808,809,825).CCLS.		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:11
IS&R	L10	1323	(707/512,530,531,534).CCLS.		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:12
BRS	L11	3	l6 and l8		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:14
BRS	L12	48	l3 and (l9 or l10)		
			USPAT; EPO; JPO; DERWENT; IBM_TDB		2002/11/25 15:15
BRS	L13	4	assist$3 or select$3 or sugest$3) same menu same(program$4 near5 statement$1		
				US-PGPUB	2002/11/25 15:24
BRS	L14	0	l1 and l2	US-PGPUB	2002/11/25 15:24

Brief Summary Text - BSTX (24):

Selection menu information in an assist window includes any finite list of previously declared entities and/or entity types that can validly be included at the present character position cursor location in a programming language statement. A selection menu includes at least one menu item. The set of the at least one menu item in a given selection menu is defined by the portion of the programming language statement that immediately precedes the present character position cursor location. A menu item being displayed in a selection menu can be accepted by the programmer in a manner that results in the selected menu item being automatically inserted into the immediate programming language statement at the present character position cursor location without the programmer having to type any or all of the characters of the selected menu item. Thus, a selection menu assist window supplies information about a programming language statement and the ability to build all or part of a programming language statement in a manner that the programmer can use or ignore individually or in combination according to the programmer's immediate needs.

Detailed Description Text - DETX (8):

A selection menu assist window displays a finite list of syntactically valid menu items that are based on previously defined object entities. Each menu item in a given selection menu assist window is also only applicable to the immediate section of the programming language statement that is proximate the character position cursor on the programmer's display screen. Choosing from the finite list of menu items saves the programmer from having to independently recall the list of valid possibilities that can be used to complete an

Details | Text | Image | HTML | KWIC

	U	S1	Document ID	Current OR	Pages	Title
1	☐	☐	US 6311323 B1	717/111	25	Computer programming language statement building and informati
2	☑	☐	US 6026233 A	717/113	24	Method and apparatus for preser selecting options to modify a
3	☑	☐	US 6657091 A	726/37	41	Video display controller, user int and programming structure for si
4	☑	☐	US 6408603 A	345/763	65	Global process control informatic system and method
6	☑	☐	EP 292647 A2			Operator assistance method for processing.
6	☐	☐	US 6657091 A			Display controller for video displa

Details | Text | Image | HTML

US006311323B1

(12) **United States Patent**
Shulman et al.

(10) Patent No.: US 6,311,323 B1
(45) Date of Patent: *Oct. 30, 2001

(54) COMPUTER PROGRAMMING LANGUAGE STATEMENT BUILDING AND INFORMATION TOOL

(75) Inventors: Matthew Shulman, Bellevue; Matthew James Carland, Redmond; Martin Cibulka, Redmond; David Anthony Sobeski, Redmond, all of WA (US)

(73) Assignee: Microsoft Corporation, Redmond, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 09/391,087

(22) Filed: Sep. 7, 1999

Related U.S. Application Data

(63) Continuation of application No. 08/953,822, filed on May 27, 1997, now Pat. No. 6,026,233.

(51) Int. Cl.[7] G06F 9/45

(52) U.S. Cl. 717/1; 717/4; 717/5; 345/337; 345/338

(58) Field of Search 395/701, 702; 345/337, 338, 353; 707/534; 717/1, 4, 5

(56) References Cited

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Travers, L.; Selfridge, P.; "Intelligent Assistance for Software Construction: A Case Study"; Proceedings of the Ninth Knowledge–Based Software Engineering Conference; pp. 14–21, Sep. 1994.*

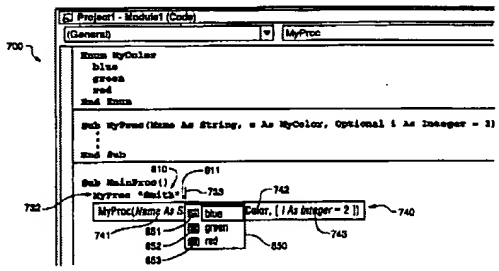
(List continued on next page.)

Primary Examiner—Rebs I. Elmore
(74) *Attorney, Agent, or Firm*—Leydig, Voit & Mayer, Ltd.

(57) ABSTRACT

An intelligent real time tool to assist a computer programmer during the writing and/or maintenance of a computer program. The tool generates assist windows that contain program related information that the programmer can use to construct a programming language statement and/or to obtain real time information about a programming language statement. An assist window can be automatically displayed as determined by the tool itself, and/or manually displayed on demand in response to a user input command. An assist window displays two general categories of information including but not limited to selection menu information based on a partial compilation of all programming language statements, and informational displays based on a partial compilation and a reverse parse of an immediate programming language statement. The statement generating tool assist windows are non-intrusive to programmer input and can be ignored by the programmer by merely continuing to type an immediate programming language statement without interacting with the assist windows that are proximate the programming language statement being constructed by the programmer.

37 Claims, 11 Drawing Sheets



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EAST Browser - L4: [6] menu same[li... | US 6026233 A | Tag: S | Doc: 2/6 | Format: KWIC

File Edit View Tools Window Help

Selection menu information in an assist window includes any finite list of previously declared entities and/or entity types that can validly be included at the present character position cursor location in a programming language statement. A selection menu includes at least one menu item. The set of the at least one menu item in a given selection menu is defined by the portion of the programming language statement that immediately precedes the present character position cursor location. A menu item being displayed in a selection menu can be accepted by the programmer in a manner that results in the selected menu item being automatically inserted into the immediate programming language statement at the present character position cursor location without the programmer having to type any or all of the characters of the selected menu item. Thus, a selection menu assist window supplies information about a programming language statement and the ability to build all or part of a programming language statement in a manner that the programmer can use or ignore individually n combination according to the programmer's immediate needs.

Detailed Description Text - DETX (8):

A selection menu assist window displays a finite list of syntactically valid menu items that are based on previously defined object entities. Each menu item in a given selection menu assist window is also only applicable to the immediate section of the programming language statement that is proximate to the character position cursor on the programmer's display screen. Choosing from the finite list of menu items saves the programmer from having to independently recall the list of valid possibilities that can be used to complete an immediate section of a programming language statement. Choosing from the finite list of menu items also saves the programmer from having to manually

Details | Text | Image | HTML | KWIC

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3	☑	☐	US 5667091 A	726/37	41	Video display controller, user inte and programming structure for si
4	☑	☐	US 5408603 A	345/763	65	Global process control informatic system and method
5	☑	☐	EP 292647 A2			Operator assistance method for processing.
6	☐	☐	US 5667091 A			Display controller for video displa

Details | Text | Image | HTML

US006026233A

United States Patent [19]

Shulman et al.

[11] Patent Number: 6,026,233

[45] Date of Patent: Feb. 15, 2000

[54] METHOD AND APPARATUS FOR PRESENTING AND SELECTING OPTIONS TO MODIFY A PROGRAMMING LANGUAGE STATEMENT

[75] Inventors: Matthew Shulman, Bellevue; Matthew James Curland, Redmond; Martin Cthulks, Redmond; David Anthony Sobeski, Redmond, all of Wash.

[73] Assignee: Microsoft Corporation, Redmond, Wash.

[21] Appl. No.: 08/843,622

[22] Filed: May 27, 1997

[51] Int. Cl.[7] G06F 9/45

[52] U.S. Cl. 395/701; 395/702; 345/347; 707/534

[58] Field of Search 395/705, 706, 395/707, 708, 709, 701, 702; 707/534; 345/338, 347, 353

[56] References Cited

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Terveen, L.; Selfridge, P.; "Intelligent Assistance for Software Construction: A Case Study"; Proceedings of the Ninth Knowledge-Based Software Engineering Conference; pp. 14–21, Sep. 1994.

Kaiser, G.; Feller, P.; Popovich, S.; " Intelligent Assistance for Software Development and Maintenance"; IEEE Software; vol. 5, Issue 3, pp. 40–49, May 1988.

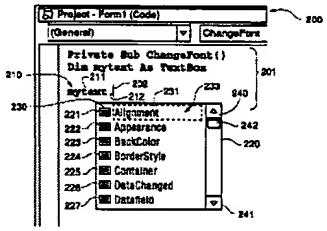
Microsoft Corporation; "Getting Results with Microsoft Office for Windows 95, Version 7.0"; Microsoft Press; p. 303, 1995.

Primary Examiner—Emanuel Todd Voltz
Assistant Examiner—Brian Santiago
Attorney, Agent, or Firm—Leydig, Voit & Mayer, Ltd

[57] ABSTRACT

An intelligent real time tool to assist a computer programmer during the writing and/or maintenance of a computer program. The tool generates assist windows that contain program related information that the programmer can use to construct a programming language statement and/or to obtain real time information about a programming language statement. An assist window can be automatically displayed as determined by the tool itself, and/or manually displayed on demand in response to a user input command. An assist window displays two general categories of information including but not limited to selection menu information based on a partial compilation of all programming language statements, and informational displays based on a partial compilation and a reverse parse of an immediate programming language statement. The statement generating tool assist windows are non-intrusive to programmer input and can be ignored by the programmer by merely continuing to type an immediate programming language statement without interacting with the assist windows that are proximate the programming language statement being constructed by the programmer.

8 Claims, 11 Drawing Sheets



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digitally encoded control program data stored in said memory devices and effective on execution by said microcontroller for modifying said video signals in predetermined manners in response to predetermined image directing signals,
said program data having at least two layered statements executed sequentially,
each said statement being a selected one of a menu statement and a flow statement, said menu statement having at least a description portion for directing a display to a user and selectively having an action portion for directing data structure flow to another statement, said flow statement having at least an action portion for directing data structure flow to another statement and selectively having a description portion for directing a display to a user, each of said menu and flow statements which has both description and
action portions also having a unique connector character disposed between said

portions for identifying the distinction therebetween.

Claims Text - CLTX (22):

digitally encoded control program data stored in said memory devices and effective on execution by said microcontroller for modifying said video signals in predetermined manners in response to predetermined image directing signals,
said program data having at least two layered statements executed sequentially,
each said statement being a selected one of a menu statement and a flow statement, said menu statement having at least a description portion for directing a display to a user and selectively having an action portion for directing data structure flow to another statement, said flow statement having at least an action portion for directing data structure flow to another statement and selectively having a description portion for directing a display

Details | Text | Image | HTML | KWIC

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2	☐	☐	US 6026233 A	717/113	24	Method and apparatus for preser selecting options to modify a
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6	☐	☐	US 6667091 A			Display controller for video displa

Details | Text | Image | HTML

US005657091A

United States Patent [19]
Bertram

[11] Patent Number: 5,657,091
[45] Date of Patent: *Aug. 12, 1997

[54] VIDEO DISPLAY CONTROLLER, USER INTERFACE AND PROGRAMMING STRUCTURE FOR SUCH INTERFACE

[75] Inventor: Randal Lee Bertram, Raleigh, N.C.

[73] Assignee: International Business Machines Corporation, Armonk, N.Y

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,548,340.

[21] Appl. No.: 851,630

[22] Filed: Nov. 1, 1996

[51] Int. Cl.[6] H04N 5/44
[52] U.S. Cl. 348/559; 348/558; 348/589; 348/734; 345/113; 381/61
[58] Field of Search 348/734, 725, 348/601, 906, 473, 563-565, 589; 345/158, 167, 157, 161; 359/146; 381/61; 455/4.2; 395/152; H04N 5/44

[56] References Cited

U.S. PATENT DOCUMENTS

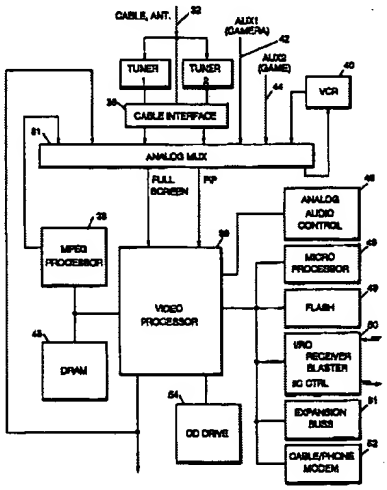
5,539,478 7/1996 Bertram et al. 348/734
5,548,340 8/1996 Bertram 348/559

Primary Examiner—Glenton B. Burgess
Attorney, Agent, or Firm—David B. McConnell

[57] ABSTRACT

The use of video/audio signal streams such as in the past have been distributed by broadcast over radio frequency bands or by cable distribution, or made available from video recorder/player devices such as cassette recorders or video disc players, or made available from direct, live sources such as cameras, game systems or computers. In accordance with this invention, programs stored in memory devices associated with microcontrollers controlling the display to a user are constructed in a language which uses layered statements, each of which can have a description portion, an action portion, and a unique connecting character.

6 Claims, 17 Drawing Sheets



Details | Text | Image | HTML | Full

digitally encoded control program data stor... said memory devices and effective on execution by said microcontroller for modifying said video signals in predetermined manners in response to predetermined image directing signals,
said program data having at least two layered statements executed sequentially,
each said statement being a selected one of a menu statement and a flow statement, said menu statement having at least a description portion for directing a display to a user and selectively having an action portion for directing data structure flow to another statement, said flow statement having at least an action portion for directing data structure flow to another statement and selectively having a description portion for directing a display to a user, each of said menu and flow statements which has both description and
action portions also having a unique connector character disposed between said

portions for identifying the distinction therebetween.

Claims Text - CLTX (63):

digitally encoded control program data stored in said memory devices and effective on execution by said microcontroller for modifying said video signals in predetermined manners in response to predetermined image directing signals,
said program data having at least two layered statements executed sequentially,
each said statement being a selected one of a menu statement and a flow statement, said menu statement having at least a description portion for directing a display to a user and selectively having an action portion for directing data structure flow to another statement, said flow statement having at least an action portion for directing data structure flow to another statement and selectively having a description portion for directing a display

Details | Text | Image | HTML | KWIC

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Details | Text | Image | HTML

US005657091A

United States Patent [19]
Bertram

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[45] Date of Patent: *Aug. 12, 1997

[54] VIDEO DISPLAY CONTROLLER, USER INTERFACE AND PROGRAMMING STRUCTURE FOR SUCH INTERFACE

[75] Inventor: Randal Lee Bertram, Raleigh, N.C.

[73] Assignee: International Business Machines Corporation, Armonk, N.Y

[*] Notice: This term of this patent shall not extend beyond the expiration date of Pat. No. 5,548,340.

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[22] Filed: Nov. 1, 1995

[51] Int. Cl.[6] H04N 5/44

[52] U.S. Cl. 348/839; 348/518; 348/589; 348/734; 345/113; 381/61

[58] Field of Search 348/734, 725, 348/501, 906, 473, 563-565, 589; 345/158, 167, 157, 161; 359/146; 381/61; 455/4.2; 395/152; H04N 5/44

[56] References Cited

U.S. PATENT DOCUMENTS

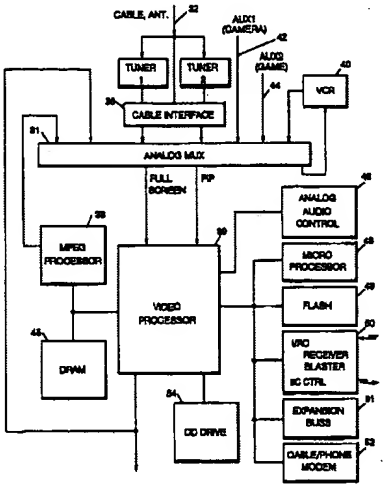
5,539,478 7/1996 Bertram et al. 348/734
5,548,340 8/1996 Bertram 348/559

Primary Examiner—Glenton B. Burgess
Attorney, Agent, or Firm—Daniel B. McConnel

[57] ABSTRACT

The use of video/audio signal streams such as in the past have been distributed by broadcast over radio frequency bands or by cable distribution, or made available from video recorder/player devices such as cassette recorders or video disc players, or made available from direct, live sources such as cameras, game systems or computers. In accordance with this invention, programs stored in memory devices associated with microcontrollers controlling the display to a user are constructed in a language which uses layered statements, each of which can have a description portion, an action portion, and a unique connecting character.

6 Claims, 17 Drawing Sheets



Full

EAST Browser - [4: (6) menu same(fi... | US 5408603 | Tag: S | Doc: 4/6 | "Full" 1/65 | Total images 65]

File Edit View Tools Window Help

US-PAT-NO: 5408603

DOCUMENT-IDENTIFIER: US 5408603 A

TITLE: Global process control information system and method

—— KWIC ——

Detailed Description Text - DETX (128):

Frequently, the user will want to follow a thread or sequence of displays, backtracking or moving forward through related program statements to locate which program statement is in control of a portion in question of the overall process. This may be conveniently done by selecting the previous pipe button 224 on the main menu bar. See FIG. 15g. Depressing the previous pipe button causes a pull-down menu to appear below the button in which a predetermined number of the variable names last displayed are listed. The previous pipe button is quite handy, since often a user will want to reselect for display a program statement which was recently displayed. The previous pipes list is reset or cleared when a different computer is selected via the computer selection button 204.

Details | Text | Image | HTML | KWIC

	U	1	Document ID	Current OR	Pages	Title
1	☐	☐	US 6311323 B1	717/111	26	Computer programming language statement building and informati
2	☐	☐	US 6026233 A	717/113	24	Method and apparatus for preser selecting options to modify a
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6	☐	☐	US 6667091 A			Display controller for video displa

Details | Text | Image | HTML

US005408603A

United States Patent [19]

Van de Lavoir et al.

[11] Patent Number: 5,408,603

[45] Date of Patent: Apr. 18, 1995

[54] GLOBAL PROCESS CONTROL INFORMATION SYSTEM AND METHOD

[75] Inventors: Remy Van de Lavoir, AS Sint Jansteen, Netherlands; Mariano Polla, Neerpelt, Belgium; Ian Rewsaroft, Wiltshire Cty., Great Britain

[73] Assignee: Dow Benelux N.V., Netherlands

[21] Appl. No.: 861,871

[22] Filed: Mar. 31, 1992

[51] Int. Cl.[6] G06F 15/46

[52] U.S. Cl. 395/161

[58] Field of Search 395/160, 161, 140, 155; 364/419.01, 419.08; 345/115, 116, 131

[56] References Cited

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Allen I. Holub, *Compiler Design In C*, Prentice-Hall, Inc., 1990, Chap. 5.1, "How Bottom-Up Parsing Works," Chap. 5.2 Recursion in Bottom-Up Parsing, pp. 337-343.

Donnelly and Stallman, *BISON The YACC-Compatible Parser Generator*, Dec. 1990, Bison Version 1.12, pp. 1-96.

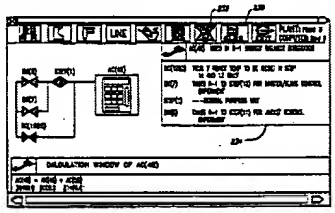
Primary Examiner—Phu K. Nguyen

Attorney, Agent, or Firm—Harness, Dickey & Pierce

[57] ABSTRACT

The process control display program receives input in the form of an alphanumeric process control statement. The alphanumeric statement is parsed into its constituent lexical units and graphical icons corresponding to those lexical units are arranged on the display screen in an interconnected network or pattern which corresponds to the syntactic relationship of the lexical units which make up the statement being displayed. The change or flow of live data is depicted by changing the visual quality or color of the icons and their interconnecting network to provide a graphical representation of the alphanumeric statement which is readily understood by users worldwide.

36 Claims, 27 Drawing Sheets



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PAT-NO: EP000292647A2

DOCUMENT-IDENTIFIER: EP 292647 A2

TITLE: Operator assistance method for data processing.

PUBN-DATE: November 30, 1988

INVENTOR-INFORMATION:

NAME	COUNTRY
HEARIN, KAREN KASTNER	N/A
JAMES, WENDY SUE	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
IBM	US

APPL-NO: EP88102729

APPL-DATE: February 24, 1988

PRIORITY-DATA: US03429487A (April 1, 1987)

INT-CL (IPC): G06F003/023
;G06F003/033
EUR-CL (EPC): G06F009/44

ABSTRACT:

CHG DATE=19990617 STATUS=O> In a computer program requiring an instruction
statement having commands arranged in a predefined syntax, an aid is

incorporated to help an operator in constructing the instruction statement by causing the displaying of a first screen portion having a plurality of command areas, a designation of one of the command areas, and a second screen portion of input data alternatives for the designated command area; and, upon receiving information from the operator containing input data for the designated command area, the updating of the first screen portion to reflect such input data, the designating of a next command area and the changing of data alternatives of the second screen portion to a set appropriate to such next command area; the latter operations being repeated until all of the commands for the instruction statement have been input whereby the command is aggregated in a manner conforming to the predetermined syntax even though the operator may be unaware of that syntax. As a preliminary set-up operation, a prior display is progressively created repeatedly prompting the operator to provide input data and displaying such input data received from the operator in response to the menu, this prior display being wiped, when complete, and replaced by the two screen portion display of the preceding claims which is generated from the cummulative prior input operator data.

PAT-NO: EP000292647A2

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ABSTRACT:

CHG DATE=19990617 STATUS=O> In a computer program requiring an instruction statement having commands arranged in a predefined syntax, an aid is incorporated to help an operator in constructing the instruction statement by

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	U	1	Document ID	Current OR	Pages	Title
2	☐	☐	US 6026233 A	717/113	24	Method and apparatus for preser selecting options to modify a
3	☐	☐	US 5657091 A	725/37	41	Video display controller, user int and programming structure for si
4	☐	☐	US 5408603 A	345/763	65	Global process control informatic system and method
5	☐	☐	EP 292647 A2		18	Operator assistance method for processing.
6	☐	☐	US 5657091 A		41	Display controller for video displa - has programs stored in memori

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Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: 0 292 647 A2

EUROPEAN PATENT APPLICATION

(21) Application number: 88102729.6

(51) Int. Cl.⁴: G06F 3/023

(22) Date of filing: 24.02.88

The title of the invention has been amended (Guidelines for Examination in the EPO, A-III, 7.3).

(30) Priority: 01.04.87 US 34294

(43) Date of publication of application: 30.11.88 Bulletin 88/48

(84) Designated Contracting States: DE FR GB

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(54) Operator assistance method for data processing.

(57) In a computer program requiring an instruction statement having commands arranged in a predefined syntax, an aid is incorporated to help an operator in constructing the instruction statement by causing the displaying of a first screen portion having a plurality of command areas, a designation of one of the command areas, and a second screen portion of input data alternatives for the designated command area; and, upon receiving information from the operator containing input data for the designated command area, the updating of the first screen portion to reflect such input data, the designating of a next command area and the changing of data alternatives of the second screen portion to a set appropriate to such next command area; the latter operations being repeated until all of the commands for the instruction statement have been input whereby the command is aggregated in a manner conforming to the predetermined syntax even though the operator may be unaware of that syntax. As a preliminary set-up operation, a prior display is progressively created repeatedly prompting the operator to provide input data and displaying such input data received from the operator in response to the menu, this prior display being wiped, when complete, and replaced by the two screen portion display of the preceding claims which is generated from the cummulative prior input operator data.

EP 0 292 647 A2

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File Edit View Tools Window Help

INT-CL (IPC): H04N005/44

ABSTRACTED-PUB-NO: US 5657091A

BASIC-ABSTRACT: The controller includes receiver circuitry which receives command signals from command transmitter circuitry and derives image directing signals. The image directing signals direct modification of visual images displayed by a video display. A microcontroller is coupled to the command receiver circuitry and to the video display, receives the image directing signals and executes control sequences in response. The visual images are modified according to manipulation of a remote control device by a human observer. Memories coupled to the microcontroller receive, store and deliver digitally encoded data used by the microcontroller to execute control programs.

Digitally encoded control program data stored in memory modify the video signals in response to predetermined image directing signals. The program data, have at least two layered statements executed sequentially, with each statement selected from a menu or flow statement. The menu statement has a description portion which directs a display to a user. An action portion directs data structure flow to another statement. The flow statement has at least an action portion which directs data structure flow to another statement and has a description portion which directs a display to a user. Each menu and flow statement with both description and action portions also has a unique connector character which identifies the distinction between the portions.

ADVANTAGE - Minimal buttons need be actuated by user for simple interface.

CHOSEN-DRAWING: Dwg.3/18

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	U	[1]	Document ID	Current OR	Pages	Title
2	☐	☐	US 6026233 A	717/113	24	Method and apparatus for preser selecting options to modify a
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6	☐	☐	US 5657091 A		41	Display controller for video displa - has programs stored in memori

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US005657091A

United States Patent [19]

Bertram

[11] Patent Number: 5,657,091

[45] Date of Patent: *Aug. 12, 1997

[54] VIDEO DISPLAY CONTROLLER, USER INTERFACE AND PROGRAMMING STRUCTURE FOR SUCH INTERFACE

[75] Inventor: Randal Lee Bertram, Raleigh, N.C.

[73] Assignee: International Business Machines Corporation, Armonk, N.Y

[*] Notice: This term of this patent shall not extend beyond the expiration date of Pat. No. 5,548,340.

[21] Appl. No.: 851,630

[22] Filed: Nov. 1, 1995

[51] Int. Cl.[6] H04N 5/44

[52] U.S. Cl. 348/559; 348/518; 348/589; 348/734; 345/113; 381/61

[58] Field of Search 348/734, 725, 348/601, 906, 473, 563–565, 589; 345/158, 167, 157, 161; 359/146; 381/61; 455/4.2; 395/152; H04N 5/44

[56] References Cited

U.S. PATENT DOCUMENTS

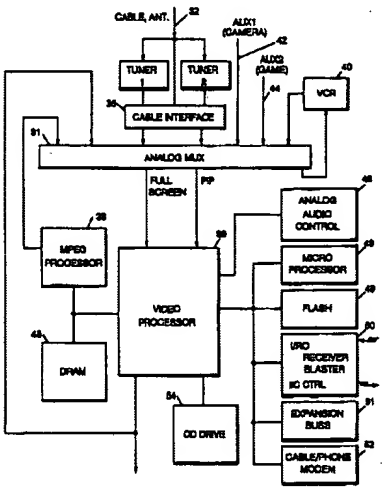
5,539,478 7/1996 Bertram et al. 348/734
5,548,340 8/1996 Bertram 348/559

Primary Examiner—Glenton B. Burgess
Attorney, Agent, or Firm—David H. McConnel

[57] ABSTRACT

The use of video/audio signal streams such as in the past have been distributed by broadcast over radio frequency bands or by cable distribution, or made available from video recorder/player devices such as cassette recorders or video disc players, or made available from direct, live sources such as cameras, game systems or computers. In accordance with this invention, programs stored in memory devices associated with microcontrollers controlling the display to a user are constructed in a language which uses layered statements, each of which can have a description portion, an action portion, and a unique connecting character.

8 Claims, 17 Drawing Sheets



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an element for storing the computer program being generated. A further element
displays the program to the operator. A positioning element demarks a location of interest within the program. A menu element displays permissible programming modifications for the location of interest. The menu element incorporates in its display of permissible programming modifications statements

for machine vision analysis of an object image, e.g., calls to machine vision subroutines and functions. To facilitate specification of input parameters to those subroutines and functions, the imaging element can generate a candidate image of the object upon which the machine vision analysis is to be run. A graphical input element displays over that candidate image a graphical icon that the operator can manipulate to specify the parameters. A textual input element can display an icon, e.g., a dialog box, prompting the operator to designate textually input parameters for the machine vision tool. An update element responds to the operator selection by appropriately modifying the stored program.

Detailed Description Text - DETX (6):

The menu element 16 graphically displays a list of permissible programming modifications. The programming modifications are syntactically correct--that is, they include additions or deletions that insure that the program contains proper language constructs. In a preferred embodiment, the permissible programming modifications include permissible additions, deletions and other modifications of the program. The additions, themselves, include programming statements e.g., commands, declarations, subroutines and functions and function calls. The preferred illustrated embodiment is intended for use in generating computer programs for machine vision analysis and, accordingly, specifically includes programming statements e.g., subroutine and function calls, for invoking machine vision tools. The menu 16 accepts responds to an operator's selection of a modification by generating a selection signal 19.

	U	1	Document ID	Current OR	Pages	Title
1			US 6311323 B1	717/111	25	Computer programming language statement building and informatior
2			US 6026233 A	717/113	24	Method and apparatus for presenti selecting options to modify a
3			US 5481712 A	717/109	41	Method and apparatus for interacti generating a computer program fo

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DOCUMENT-IDENTIFIER: US 5481712 A

TITLE: Method and apparatus for interactively generating a computer program for machine vision analysis of an object

—— KWIC ——

Abstract Text - ABTX (1):

A system for interactively generating a computer program for machine vision analysis insures that the program is correct by permitting the operator to make only syntactically correct modifications to the program. The system includes an element for storing the computer program being generated. A further element
displays the program to the operator. A positioning element demarks a location of interest within the program. A menu element displays permissible programming modifications for the location of interest. The menu element incorporates in its display of permissible programming modifications statements

for machine vision analysis of an object image, e.g., calls to machine vision subroutines and functions. To facilitate specification of input parameters to those subroutines and functions, the imaging element can generate a candidate image of the object upon which the machine vision analysis is to be run. A graphical input element displays over that candidate image a graphical icon that the operator can manipulate to specify the parameters. A textual input element can display an icon, e.g., a dialog box, prompting the operator to designate textually input parameters for the machine vision tool. An update element responds to the operator selection by appropriately modifying the stored program.

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	U	1	Document ID	Current OR	Pages	Title
1	☐	☐	US 6311323 B1	717/111	26	Computer programming language statement building and information
2	☐	☐	US 6026233 A	717/113	24	Method and apparatus for presenti selecting options to modify a
3	☐	☐	US 5481712 A	717/109	41	Method and apparatus for interacti generating a computer program fo

Details | Text | Image | HTML

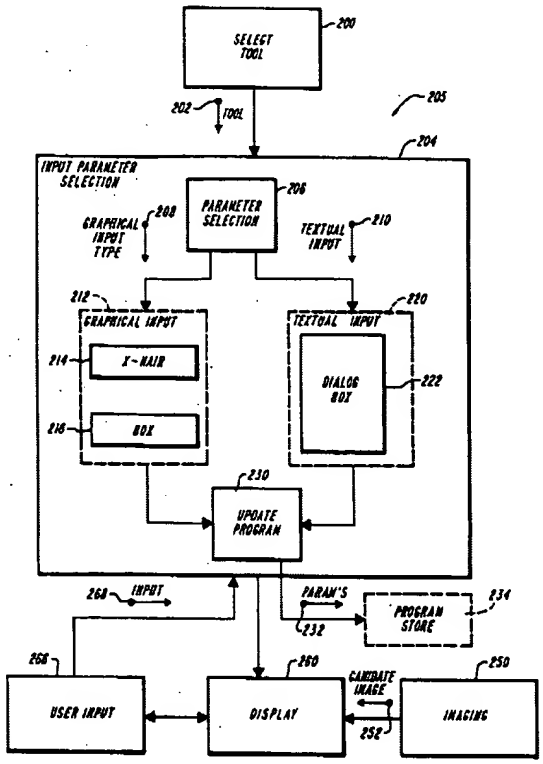

FIG. 2

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